

What is claimed is:

1. An external noise intrusion prevention device having an input terminal and an output terminal connectable to a coaxial cable, comprising:

    a first filter circuit letting a signal in a predetermined frequency band pass, the input terminal and the output terminal connected to each other through the first filter circuit;

    a second filter circuit letting a signal in a predetermined frequency band different from said predetermined frequency band pass; and

    a noise elimination circuit connected between the input terminal and the output terminal through the second filter, wherein

    the noise elimination circuit is formed by cascading two connection transformers each having a primary winding and a secondary winding, the two connection transformers being a front connection transformer and a rear connection transformer, one end of the primary winding of the front connection transformer connected to a core on said input terminal side and the other end of the primary winding of the front connection transformer connected to an input-side ground section, one end of the secondary winding of the rear connection transformer connected to a core on said output terminal side and the other end of the secondary winding of the rear connection transformer connected to an output-side ground section.

2. An external noise intrusion prevention device having an

input terminal and an output terminal connectable to a coaxial cable, comprising:

    a first filter circuit letting a signal in a predetermined frequency band pass, the input terminal and the output terminal connected to each other through the first filter circuit;

    a second filter circuit letting a signal in a predetermined frequency band different from said predetermined frequency band pass; and

    a noise elimination circuit connected between the input terminal and the output terminal through the second filter, wherein

the noise elimination circuit consists of a transformer having a turns ratio of 1 to 1, one end of a primary winding of the transformer connected to a core on said input terminal side and the other end of the primary winding connected to an input-side ground section, one end of a secondary winding of the transformer connected to a core on said output terminal side and the other terminal of the secondary winding connected to an output-side ground section.

3. An external noise intrusion prevention device according to claim 1 or 2, wherein

    the input-side ground section is connected to the output-side ground section to prevent a direct current from passing.

4. A protector comprising: an arrester; and a choke coil,

the protector preventing an abnormal voltage entering from an input terminal from flowing from an output terminal, the protector comprising an external noise intrusion prevention device according to any one of claims 1 to 3, the external noise intrusion prevention device provided on an output terminal section.

5. A signal amplifier provided midway along a bi-directional CATV trunk letting an up signal and a down signal pass, and amplifying at least the down signal from a center station, the signal amplifier comprising:

an external noise intrusion prevention device according to claim 1 or 2, the external noise intrusion prevention device provided in an output section outputting the down signal.

6. A signal amplifier provided midway along a bi-directional CATV trunk letting an up signal and a down signal pass, and amplifying at least the down signal from a center station, the signal amplifier comprising:

a noise elimination circuit provided in an output section outputting the down signal, and consisting of a pair of connection transformers, the pair of connection transformer being a front connection transformer and a rear connection transformer cascaded to each other, one end of a primary winding of the front connection transformer connected to said output section and the other end of the primary winding of the front connection transformer connected to a ground section of the output section,

one end of a secondary winding of the rear connection transformer connected to a core of an output terminal of said signal amplifier and the other end of the secondary winding of the rear connection transformer connected to a ground section of the output terminal.

7. A signal amplifier provided midway along a bi-directional CATV trunk letting an up signal and a down signal pass, and amplifying at least the down signal from a center station, the signal amplifier comprising:

a noise elimination circuit provided in an output section outputting the down signal, and consisting of a transformer having a turns ratio of 1 to 1, one end of a primary winding of the transformer connected to said output section and the other end of the transformer connected to a ground section of the output section, one end of a secondary winding of the transformer connected to a core of an output terminal of said signal amplifier and the other end of the secondary winding of the transformer connected to a ground section of the output terminal.

8. An antenna plug having two coaxial cable connection terminals on both ends, respectively, and comprising an external noise intrusion prevention circuit according to any one of claims 1 to 3, the external noise intrusion prevention device interposed between the two coaxial cable connection terminals.

9. An antenna plug having two coaxial cable connection terminals on both ends, respectively, and comprising an external

noise intrusion prevention circuit interposed between the two coaxial cable connection terminals, wherein

the noise elimination circuit is formed by cascading two connection transformers each having a primary winding and a secondary winding, the two connection transformers being a front connection transformer and a rear connection transformer, one end of the primary winding of the front connection transformer connected to a core of one of the coaxial cable connection terminals or one of F-type connection terminals and the other end of the primary winding of the front connection transformer connected to a ground section of one of the coaxial cable connection terminals or one of the F-type connection terminals, one end of the secondary winding of the rear connection transformer connected to a core of the other one of the coaxial cable connection terminals or the other one of the F-type connection terminals and the other end of the secondary winding of the rear connection transformer connected to a ground section of the other one of the coaxial cable connection terminals or the other one of the F-type connection terminals.

10. An antenna plug having two coaxial cable connection terminals on both ends, respectively, and comprising an external noise intrusion prevention circuit interposed between the two coaxial cable connection terminals, wherein

the noise elimination circuit consists of a transformer having a turns ratio of 1 to 1, one end of a primary winding of the transformer connected to a core of one of the coaxial

cable connection terminals or one of F-type connection terminals and the other end of the primary winding of the transformer connected to a ground section of one of the coaxial cable connection terminals or one of the F-type connection terminals, one end of the secondary winding of the transformer connected to a core of the other one of the coaxial cable connection terminals or the other one of the F-type connection terminals and the other end of the secondary winding of the transformer connected to a ground section of the other one of the coaxial cable connection terminals or the other one of the F-type connection terminals.